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| 10/630,971 | 07/31/2003 | Luciano Lenzini | 60091-00206 | 1843 |

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| EXAMINER | |
|---|---|
| NGUYEN, KHAI MINH | |
| **ART UNIT** | **PAPER NUMBER** |
| 2617 | |

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
|---|---|---|
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/630,971 | LENZINI ET AL. | |
| | Examiner | Art Unit | |
| | Khai M. Nguyen | 2617 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *02 February 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Response to Arguments*

1. Applicants respectfully elect to prosecute the subject matter of Invention I, recited in claims 1-25, drawn to an operation that enables a data transmission method in a communication system, the system comprising at least one base station and at least one subscriber station, wherein the at least one subscriber station allocates capacity for connections (455/450 (a mobile station is assigned a communication resource for communication)).

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 20 and 25 are rejected under 35 U.S.C. 102(e) as being anticipated by Pathak et al. (U.S.Pat-7016317).

Regarding claim 20, Pathak teaches a subscriber station of a communication system, wherein the subscriber station allocates a capacity for connections (fig.1, abstract), the subscriber station comprising:

first transmitting means for transmitting capacity request messages of at least one connection (col.2, line 57 to col.3, line 52);

receiving means for receiving capacity grant messages from a base station (col.2, line 57 to col.3, line 52);

allocating means for allocating connection-specific a capacity granted by a base station (col.2, line 57 to col.3, line 52);

second transmitting means for transmitting messages (col.2, line 57 to col.3, line 52), wherein the messages comprise information based on previous capacity requests of a subscriber station (col.2, line 57 to col.3, line 52); and

third transmitting means for transmitting data according to a capacity allocation made by the subscriber station (col.2, line 57 to col.3, line 52).

Regarding claim 25, Pathak teaches a subscriber station of a communication system wherein the subscriber station (fig.1, subscriber 32) allocates capacity for connections (fig.1, abstract), the subscriber station configured to:

transmit capacity request messages of at least one connection (fig.1, col.5, lines 36-47);

allocate connection-specific a capacity granted by a base station (fig.1, col.5, lines 36-47);

transmit messages wherein the messages comprise information on previous capacity requests (col.2, line 57 to col.3, line 52); and

transmit data from a subscriber station according to a capacity allocation made by the subscriber station (col.2, line 57 to col.3, line 52).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-19 and 21-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pathak et al. (U.S.Pat-7016317) in view of IEEE Std 802.16-2001.

Regarding claim 1, Pathak teaches a data transmission method in a communication system (abstract), the system comprising at least one base station (fig.1, base station 24) and at least one subscriber station (fig.1, subscriber 32), wherein the at least one subscriber station allocates capacity for connections (fig.1, abstract), the method comprising:

first transmitting from a subscriber station at least one capacity request message (fig.1, col.5, lines 36-47);

granting a capacity subscriber station-specifically by a base station (fig.1, col.5, lines 36-47);

second transmitting at least one capacity grant message from the base station (col.2, line 57 to col.3, line 52);

connection-specifically allocating granted capacity by the subscriber station (col.2, line 57 to col.3, line 52);

third transmitting from the subscriber station at least one message wherein the at least one message comprises information based on previous capacity requests (col.2, line 57 to col.3, line 52);

fourth transmitting data from the subscriber station according to a capacity allocation (col.2, line 57 to col.3, line 52); and

Pathak fails to specifically disclose monitoring by the base station of at least one of capacity request messages, capacity grant messages and received transmissions. However, IEEE std 802.16 teaches monitoring by the base station of at least one of capacity request messages, capacity grant messages and received transmissions (page 86, section 6.2.6.1 (request IE any data grant burst type IE)). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to apply the teaching of IEEE std 802.16 to Pathak to provide a network access protocol, which minimizes collisions in the uplink and downlink.

Regarding claim 2, Pathak teaches a data transmission method in a communication system (abstract), the system comprising at least one base station (fig.1, base station 24) and at least one subscriber station (fig.1, subscriber 32), wherein the at least one subscriber station allocates capacity for connections (fig.1, abstract), the method comprising:

first determining communication groups (fig.1);

first transmitting at least one capacity request message from a subscriber station (col.2, line 57 to col.3, line 52);

granting a capacity subscriber station-specific by a base station (col.2, line 57 to col.3, line 52);

third transmitting from the subscriber station at least one message (col.2, line 57 to col.3, line 52), wherein the at least one message comprises information based on previous capacity requests (col.2, line 57 to col.3, line 52);

fourth transmitting data from the subscriber station, wherein the data is related to a connection scheduling (col.2, line 57 to col.3, line 52); and

Pathak fails to specifically disclose second determining a group priority order; second transmitting at least one capacity grant message from the base station; scheduling connections by the subscriber station based on the communication groups, the group priority order and the granted capacity; and monitoring by the base station of at least one of capacity request messages, capacity grant messages and received transmissions. However, IEEE std 802.16 teaches second determining a group priority order (page 86, section 6.2.6.1 (request IE any data grant burst type IE)); second transmitting at least one capacity grant message from the base station (page 86, section 6.2.6.1 (request IE any data grant burst type IE)); scheduling connections by the subscriber station based on the communication groups (page 85, section 6.2.5.4), the group priority order and the granted capacity (page 85, section 6.2.5.4); and monitoring by the base station of at least one of capacity request messages, capacity grant

messages and received transmissions (page 86, section 6.2.6.1 (request IE any data grant burst type IE)). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to apply the teaching of IEEE std 802.16 to Pathak to provide a network access protocol, which minimizes collisions in the uplink and downlink.

Regarding claim 3, Pathak and IEEE std 802.16 further teach the method of claim 2, wherein the first determining step comprises determining the communication groups based on connection quality demands (see Pathak, abstract, see IEEE std 802.16, page 86, section 6.2.6.1).

Regarding claim 4, Pathak and IEEE std 802.16 further teach the method of claim 2, wherein the second determining step comprises defining the group priority order based on connection quality demands (see IEEE std 802.16, page 85, section 6.2.5.4).

Regarding claim 5, Pathak and IEEE std 802.16 further teach the method of claim 2, wherein the first determining step comprises determining the communication groups comprising a service class selected from at least one of Unsolicited Grant Service, Real-Time Polling Service, Non-Real-Time Polling Service and Non-Unsolicited Grant Service (see IEEE std 802.16, page 85, section 6.2.5.1-6.2.5.4).

Regarding claim 6, Pathak and IEEE std 802.16 further teach the method of claim 1, wherein the monitoring step comprises monitoring data based on messages

and transmissions using a memory table (see IEEE std 802.16, page 85, section 6.2.5.1-6.2.5.4).

Regarding claim 7, Pathak and IEEE std 802.16 further teach the method of claim 1, wherein the third transmitting step comprises transmitting an update message which replaces at the base station a previous information connection-specific (see Pathak, col.2, line 57 to col.3, line 52).

Regarding claim 8, Pathak and IEEE std 802.16 further teach the method of claim 1, wherein the third transmitting step comprises transmitting an update message which replaces information based on a need for bandwidth for a connection (see IEEE std 802.16, page 86, section 6.2.6.1).

Regarding claim 9, Pathak and IEEE std 802.16 further teach the method of claim 1, wherein the step of monitoring by the base station comprises using information based on the request messages (see IEEE std 802.16, page 86, section 6.2.6.1), the capacity grant messages and the received transmissions for avoiding a mismatch between a granted capacity and data received from a subscriber station (see IEEE std 802.16, page 86, section 6.2.6.1).

Regarding claim 10, Pathak teaches a communication system, the system comprising:

first transmitting means for transmitting capacity request messages (col.2, line 57 to col.3, line 52);

granting means for granting a capacity subscriber station-specific (col.2, line 57 to col.3, line 52);

second transmitting means for transmitting capacity grant messages (col.2, line 57 to col.3, line 52);

allocating means for allocating granted capacity connection-specific (col.2, line 57 to col.3, line 52);

third transmitting means for transmitting messages, wherein the messages comprise information based on previous capacity requests (col.2, line 57 to col.3, line 52);

fourth transmitting means for transmitting data according to the capacity allocation made by a subscriber station (col.2, line 57 to col.3, line 52); and

Pathak fails to specifically disclose monitoring by the base station of at least one of capacity request messages, capacity grant messages and received transmissions. However, IEEE std 802.16 teaches monitoring by the base station of at least one of capacity request messages, capacity grant messages and received transmissions (page 86, section 6.2.6.1 (request IE any data grant burst type IE)). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to apply the teaching of IEEE std 802.16 to Pathak to provide a network access protocol, which minimizes collisions in the uplink and downlink.

Regarding claim 11, Pathak teaches a communication system, the system comprising:

grouping means for grouping connections into predetermined communication groups (fig.1);

first transmitting means for transmitting capacity request messages (col.2, line 57 to col.3, line 52);

granting means for granting a capacity subscriber station-specific (col.2, line 57 to col.3, line 52);

second transmitting means for transmitting capacity grant messages (col.2, line 57 to col.3, line 52);

third transmitting means for transmitting messages (col.2, line 57 to col.3, line 52), wherein the messages comprise information based on previous capacity requests (col.2, line 57 to col.3, line 52);

Pathak fails to specifically disclose scheduling means for scheduling connections based on the communication groups, a predetermined group priority order and the granted capacity; fourth transmitting means for transmitting data according to a connection scheduling; and monitoring means for monitoring at least one of the request messages, the capacity grant messages and received transmissions. However, IEEE std 802.16 teaches scheduling means for scheduling connections based on the communication groups (page 86, section 6.2.6.1 (request IE any data grant burst type

IE)), a predetermined group priority order and the granted capacity (page 85, section 6.2.5.4); fourth transmitting means for transmitting data according to a connection scheduling (page 85, section 6.2.5.4); and monitoring means for monitoring at least one of the request messages, the capacity grant messages and received transmissions (page 86, section 6.2.6.1 (request IE any data grant burst type IE)). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to apply the teaching of IEEE std 802.16 to Pathak to provide a network access protocol, which minimizes collisions in the uplink and downlink.

Regarding claim 12 is rejected with the same reasons set forth in claims 3 and 4.

Regarding claim 13 is rejected with the same reasons set forth in claim 5.

Regarding claim 14 is rejected with the same reasons set forth in claim 6.

Regarding claim 15 is rejected with the same reasons set forth in claims 7 and 8.

Regarding claim 16 is rejected with the same reasons set forth in claim 9.

Regarding claim 17, Pathak teaches a base station of a communication system (fig.1, abstract), the base station comprising:

granting means for granting a transmission capacity subscriber station-specific (col.2, line 57 to col.3, line 52);

transmitting means for transmitting capacity grant messages to at least one subscriber station (col.2, line 57 to col.3, line 52); and

Pathak fails to specifically disclose monitoring by the base station of at least one of capacity request messages, capacity grant messages and received transmissions. However, IEEE std 802.16 teaches monitoring by the base station of at least one of capacity request messages, capacity grant messages and received transmissions (page 86, section 6.2.6.1 (request IE any data grant burst type IE)). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to apply the teaching of IEEE std 802.16 to Pathak to provide a network access protocol, which minimizes collisions in the uplink and downlink.

Regarding claim 18, Pathak teaches the base station of claim 17, wherein the monitoring means comprises monitoring data based on messages and transmissions using a memory table.

Regarding claim 19, Pathak teaches the base station of claim 17, further comprising avoiding means for avoiding a mismatch between a granted capacity and data received from a subscriber station using information based on request messages, capacity grant messages and received transmissions.

Regarding claim 21, Pathak teaches a subscriber station of a communication system wherein the subscriber station allocates capacity for connections, the subscriber station comprising:

first transmitting means for transmitting capacity request messages of at least one connection (col.2, line 57 to col.3, line 52);

grouping means for grouping connections into predetermined communication groups (col.2, line 57 to col.3, line 52);

second transmitting means for transmitting messages wherein the messages comprise information based on previous capacity requests (col.2, line 57 to col.3, line 52); and

Pathak fails to specifically disclose scheduling means for scheduling the connections based on the predetermined communication groups, a predetermined group priority order and a capacity granted by a base station, and third transmitting means for transmitting data according to a connection scheduling. However, IEEE std 802.16 teaches scheduling means for scheduling the connections based on the predetermined communication groups (page 85, section 6.2.5.4), a predetermined group priority order and a capacity granted by a base station (page 86, section 6.2.6.1 (request IE any data grant burst type IE)), and third transmitting means for transmitting data according to a connection scheduling (page 85, section 6.2.5.4). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to apply the teaching of IEEE std 802.16 to Pathak to provide a network access protocol, which minimizes collisions in the uplink and downlink.

Regarding claim 22, Pathak teaches the subscriber station of claim 20, wherein the communication groups comprise a service class selected from at least one of Unsolicited Grant Service, Real-Time Polling Service, Non-Real-Time Polling Service and Non-Unsolicited Grant Service.

Regarding claim 23, Pathak teaches the subscriber station of claim 20, further comprising fourth transmitting means for transmitting update messages comprising information based on the previous capacity requests, wherein the update messages replace at the base station previous information on the connection.

Regarding claim 24, Pathak teaches a base station of a communication system configured to:

receive capacity request messages from at least one subscriber station (fig.1, col.5, lines 36-47);

grant a transmission capacity subscriber station-specific (fig.1, col.5, lines 36-47), transmit capacity grant messages to the at least one subscriber station (col.2, line 57 to col.3, line 52); and

Pathak fails to specifically disclose monitoring request messages received from the at least one subscriber stations, capacity grant messages sent by a base station and data transmissions received from the at least one subscriber station. However, IEEE std 802.16 teaches monitoring request messages received from the at least one subscriber stations (page 86, section 6.2.6.1 (request IE any data grant burst type IE)), capacity grant messages sent by a base station and data transmissions received from the at least one subscriber station (page 86, section 6.2.6.1 (request IE any data grant burst type IE)). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to apply the teaching of IEEE std 802.16 to

Pathak to provide a network access protocol, which minimizes collisions in the uplink and downlink.

***Conclusion***

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khai M. Nguyen whose telephone number is 571.272.7923. The examiner can normally be reached on 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph feild can be reached on 571.272.4090. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Khai Nguyen
Au: 2617

2/20/2007

JOSEPH FEILD
SUPERVISORY PATENT EXAMINER